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Research on

Today's Issues

New Measure Identifies More U.S. Babies Facing Health Risks

Prematurity and low birth weight are the traditional signs that warn health professionals that a newborn faces an increased risk of health problems and early death.

But recent studies of hospital records identified another group of newborns that shares some of these risks. They are born full term (at least 37 weeks gestation) and are not low birth weight (5.5 pounds or more), but are nonetheless physically underdeveloped. These infants have a condition known as intrauterine growth retardation.

New research supported by the National Institute of Child Health and Human Development (NICHD) finds that about one in six U.S. newborns usually classified as normal is actually underdeveloped or premature. Among normal-weight, full-term newborns, the study found that underdeveloped babies are about twice as likely to die before their first birthdays as fully mature babies. (See Figure 1.)

The majority of all babies (80 percent) are born full term, normal weight, and fully mature. Babies in the most at-risk category—those born premature, low birth weight, and underdeveloped—have the highest infant mortality rate (more than 30 times the rate for babies born normal on all three measures). These high-risk babies represent 3 percent of all births, but 38 percent of all infant deaths.

Identifying Underdeveloped Newborns

In recent years, hospital surveys have identified underdeveloped babies using sonograms, skinfold thickness, and length. These studies also found that underdeveloped babies tend to be at least 15 percent lighter than average compared to other newborns of their same gestational age, sex, and race or ethnic group. These findings led to the development of a new measure to identify immaturity, called the fetal growth ratio.

Using this measure of maturity, W. Parker Frisbie and colleagues at the University of Texas in Austin analyzed data from the 1988 National Maternal and Infant Health Survey (NMIHS) to estimate how many U.S. babies are born underdeveloped and face health risks. They found that 16 percent of all births were misclassified as normal—about 15 percent of non-Hispanic white births, 17 percent of Mexican American births, and 19 percent of black births.

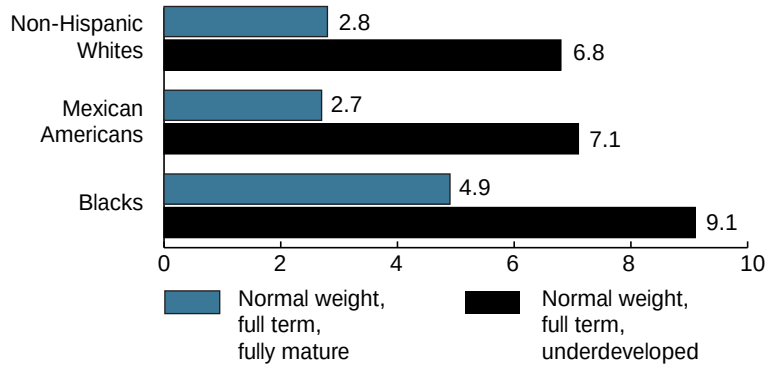
Smoking, Diet, and Prenatal Care Crucial

The researchers also examined the links between a mother's behavior and her chances of having an underdeveloped baby. Not surprisingly, the findings confirmed that smoking and lack of prenatal care play an important role.

Women who did not receive adequate prenatal care during their pregnancies were 60 percent more likely than women who did receive adequate care to give birth to underdeveloped infants. Smokers were two to three times more likely than nonsmokers to have underdeveloped babies.

The research also demonstrated the importance of adequate diet and nutrition during pregnancy. Women who participated in the Special Supplemental Food Program for Women, Infants and Children (WIC) and those who gained 41 pounds or more were significantly less likely to give birth to an underdeveloped baby. ■

Figure 1
Infant Mortality Rates Much Higher for Underdeveloped Babies

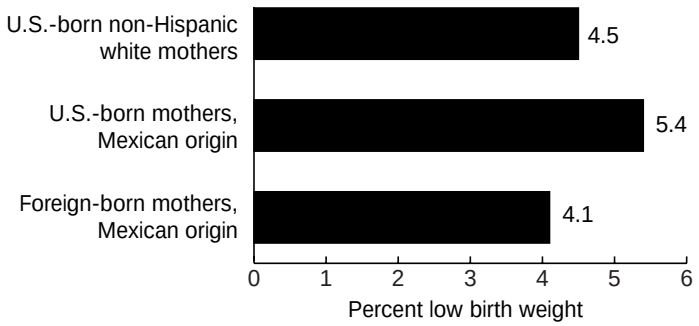


Note: Infant mortality rate is the number of deaths to infants under age 1 per 1,000 live births.
Source: Frisbie, Forbes, and Pullum, "Compromised Birth Outcomes and Infant Mortality Among Racial and Ethnic Groups," *Demography* (November 1996).

Over: Mexican American Mothers

Figure 2

Foreign-Born Mexican American Mothers Have Smaller Share of Low Birth-Weight Babies than U.S.-Born Mexican American Mothers



Landale, Oropesa, and Gorman, "Immigration and Infant Health: Birth Outcomes of Immigrant and Native Women," 1997.

Mexican American Mothers: Foreign-Born Have Fewer Low Birth-Weight Babies Than U.S.-Born

For years, research has shown that women with lower levels of education and income who lack access to prenatal care are more likely to have low-birth-weight babies than mothers with higher levels of education and income.

But Mexican American mothers do not fit this pattern. Despite Mexican American women's lower-than-average income and education levels, their babies are as healthy and heavy, on average, as children born to non-Hispanic white mothers.

Another NICHD-supported study may provide clues that help explain why Mexican American women have fewer low birth-weight babies than expected, given their education and income levels.

Nancy Landale and colleagues at Pennsylvania State University examined data on infant births and deaths from the National Center for Health Statistics for 1989, 1990, and 1991. They compared foreign-born and native-born mothers of Mexican origin and their children.

They found that foreign-born mothers had fewer low birth-weight babies than native-born mothers, despite the fact that the foreign-born mothers averaged less education and income, and received less adequate prenatal care than the native-born mothers. (See Figure 2.)

Compared with the foreign-born mothers, more than twice as many of the native-born mothers smoked during pregnancy. This finding suggests that Mexican American women who grow up in the United States may be more likely to adopt unhealthy habits (smoking, drinking, or poor diets, for example) that increase their risk of having low birth-weight babies.

When the researchers compared the two groups of mothers, they found that the native-born mothers were more likely to be young and single than the foreign-born mothers. This difference led researchers to question whether single parenthood and teenage pregnancy become more socially acceptable as Mexican Americans assimilate into U.S. culture.

These results highlight the importance of viewing Hispanic women as a distinct and heterogeneous group. The risk of delivering a low birth-weight baby appears to be higher for U.S. mothers of Mexican origin. Such distinctions can be helpful in designing programs and policies to improve infant health and reduce the risks of infant mortality. ■

References

W. Parker Frisbie, Douglas Forbes, and Starling G. Pullum, "Compromised Birth Outcomes and Infant Mortality Among Racial and Ethnic Groups," *Demography* (November 1996).

W. Parker Frisbie, Monique Biegler, Peter de Turk, Douglas Forbes, and Starling G. Pullum, "Racial and Ethnic Differences in Determination of Intrauterine Growth Retardation and Other Compromised Outcomes," *American Journal of Public Health* (September 1997).

Nancy S. Landale, R.S. Oropesa, and Bridget Gorman, "Immigration and Infant Health: Birth Outcomes of Immigrant and Native Women," (Unpublished report of the Population Research Institute and Department of Sociology, Pennsylvania State University, May 1997).

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